MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY
FINAL EXAMINATION

TRIMESTER 1, 2017/2018

HAP1011 – Human Anatomy and Physiology

16th OCTOBER 2017
2:30 - 4:30 PM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 4 printed pages, including cover page.
2. Answer **ALL FIVE** questions. All questions carry equal marks, and the distribution of the marks for each question is given.
3. Please print all your answers in the answer booklet provided.

SHORT ANSWER TYPE (SAT) QUESTIONS

Answer ALL questions [50 marks, 10 marks each]

Question 1

A. Draw a diagram of the main divisions of the nervous system. Describe each division briefly. [4 marks]

B. What are the biological functions of rod and cone cells in the eye? [2 marks]

C. A patient suffers brain damage in an automobile accident. Physicians suspect that the cerebellum, which is the part of the brain, is affected. What body functions are affected when cerebellum is damage? [1 mark]

D. What process(es) of digestion take(s) place in the small intestine? Which other organ(s) produce(s) factors that aid in the digestion? [3 marks]

Question 2

A. Birth control pills that consist of estrogen or progesterone are only taken for 21 days. A woman stops taking the birth control pill or takes a placebo pill for 7 days. Then she resumes taking the birth control pill. What is the reason for doing this? [1 mark]

B. What will happen to the corpus luteum if pregnancy does not occur and the oocyte is not fertilized? [1 mark]

C. Explain the physiological basis for administering a posterior pituitary extract to induce labor. [2 marks]

D. Name TWO hormones from outside the reproductive organs play a role in regulation of male and female reproductive organs. [1 mark]

E. Where does fertilization usually occur? [1 mark]

F. Where, specifically, are sperm cells produced in the testes? Where is the site for the maturation of sperm cells? [1 mark]

G. Provide the correct directional medical term for the following statements:
   i. When a boy is standing on his head, his nose is _____ to his mouth. [0.5 mark]
   ii. A term that means nearer the attached end of a limb is _____. [0.5 mark]

H. What is the difference between positive and negative feedback systems in physiology study? Give one example for each system. [2 marks]

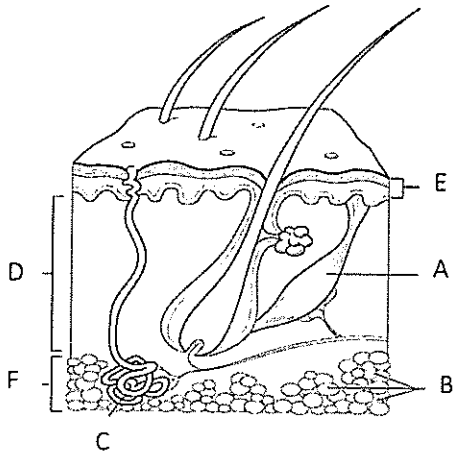
Continued...

Question 3

A. Explain how the hypothalamus of the brain controls the endocrine system. [1 mark]

B. List two similarities and differences between the endocrine and nervous systems. [4 marks]

C. Name the main components of integumentary system in the diagram. [3 marks]



D. The air is 26°C and the lake temperature is 18°C. Briefly explain why you feel cold first when entering the water, and why you still feel cold after exiting the water subsequently. [2 marks]

Question 4

A. Name the three types of muscle tissue and location of each tissue in human body. [3 marks]

B. With an example, compare the physiological effects of aerobic and anaerobic exercises. [2 marks]

C. With a simple diagram, illustrate the main components in the urinary system. [2 marks]

D. Ellen, a 47-year-old woman who has suffered kidney disease for several years, has been diagnosed with proteinuria. Her legs and feet are so swollen that she has difficulty in walking. Her hands and her left arm are also swollen. Briefly explain the proteinuria (urinary system disorder) and how could this be the cause of her swollen limbs? [3 marks]

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Question 5

A. Preload and afterload are two factors affecting stroke volume. With a simple heart diagram, illustrate the blood flow and the effect of preload and afterload on the ventricular wall. [2 marks]

B. Discuss the possible problems that can affect the heart if there is damage in any of the heart valves. [4 marks]

C. What are the organ systems that supply O_2 and eliminate CO_2 in human body? [1 mark]

D. After a long scuba diving session on a Caribbean reef, Carl boards a plane to Dallas. He begins to feel pain in his elbow on the flight back to Dallas. Briefly explain the situation happening to him using Boyle's law and Henry's law. [2 marks]

E. Muscle twitch is caused by minor muscle contractions and could be signs of a nervous system disorder. Briefly explain the event happen during relaxation period of muscle twitch. [1 mark]

End of paper